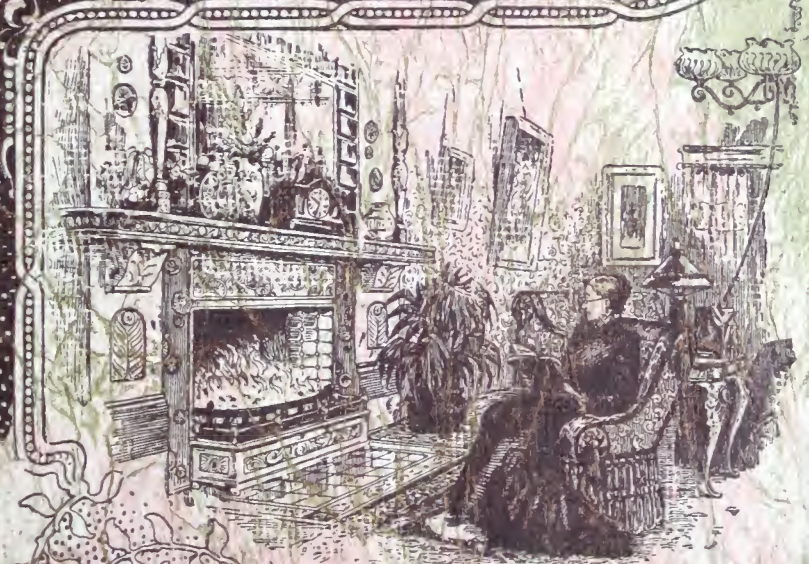


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Heat & Light - Part II.

LIGHT for EVENING HOURS.



DETROIT HEATING & LIGHTING CO.

WALLS - CO.
D.C.



NOBLE CO. COURT HOUSE ALBION, MICH.
300 LIGHT

HEAT AND LIGHT — PART II.

LIGHT FOR EVENING HOURS

*"So clear, so shining and so evident
That it will glimmer through a blind man's eye."
— Henry V.*



DETROIT HEATING AND LIGHTING CO.

FACTORY AND HOME OFFICE.

308 LANS STREET, CHICAGO.

42 PEARL STREET, BOSTON.

508 NORTH 4TH STREET, ST. LOUIS.

DETROIT,

MICH.

MDCCCXC.

O. S. GULLEY, BORNMAN & CO., PRINTERS, DETROIT, MICH.



SUSPENSION BRIDGE, NIAGARA FALLS.
30 Lights at each end.

THE subject of artificial light is one that must at some time engage the attention of every person whose home or place of business is outside the limits of city lighting service, or who has to light a factory or other building, in city or country, of such extent as to warrant the establishment of an independent plant.

Where neither city gas nor electric light is available, oil lamps are commonly used. These are troublesome and inconvenient, as well as dangerous. A demand is accordingly created for Gas Machines, many varieties of which have been placed on the market, and have found a ready sale. Most of these, by reason of false economy in material and manufacture, are so deficient in durability as to prove unprofitable investments. Many are constructed on wrong principles, and therefore not only fail in their object of supplying a reliable light, but become a source of danger. In purchasing a Gas Machine it is therefore most important to select the one having the best record for long and creditable service, and that can with certainty be depended upon for safety, durability, and a steady, brilliant light.

91-81868 TCE

THE COMBINATION GAS MACHINE is the oldest on the market, and for over twenty years has stood in the front rank of lighting apparatus. It is perfected by every device suggested by long experience, and its material and workmanship are the best that money can procure.



Residence of HON. JAS. McMICHAEL, U. S. Senator, Great Pointe, Mich.
 HEATED BY TWO 4 BOLTON HEATERS

The illustrations in this book will give an idea of the wide range of locality and the diversified character of buildings to which our machine is adapted, and in which it has for years been used with admirable results. We show country and suburban residences, churches, schools and colleges, stores, mills and factories, theatres and hotels, all over the country, from the Atlantic to the Pacific, and from Canada to the Gulf of Mexico. Many Combination Machines have also been sent to the Sandwich Islands and South America. By reason of their superior construction they are practically indestructible under

THE FOUNTAIN SPRINGS HOTEL

WAUKESHA, WIS.

1000 LIGHTS



THE ALGONQUIN

ST. ANDREWS, N.B.



300 LIGHTS

THE OCEANSIDE, CAL.



300 LIGHTS

HOTEL PARCELAND, DELAND FLA.

250 LIGHTS

100 LIGHTS

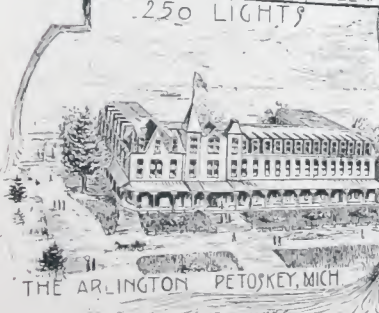
300 LIGHTS



THE ARLINGTON PETOSKEY, MICH.

TACK-A-POU-SHA HOUSE

FAR ROCKAWAY, N.Y.



GROUP OF HOTELS lighted by the COMBINATION GAS MACHINE

ordinary conditions, and we are undoubtedly within bounds in saying that more of our machines than of any other make are to-day in use, without reconstruction or material repairs.

The Combination Machine produces illuminating gas by what is known as the "carbureting" process, by which atmospheric air is brought in contact with gasoline and enriched by the absorption of its carbonaceous vapors.



Residence of DR. GEO. L. MILLER, Seymour Park, Omaha, Neb.

100 Lights

Heated by NO. 9 BOLTON HEATER.

Gasoline is one of the lightest products of the distillation of petroleum, and the quantity produced is increasing yearly. As it has been applied to no important industrial use, save



Gas Works of Henry Stephens & Co., St. Johns, N.H.

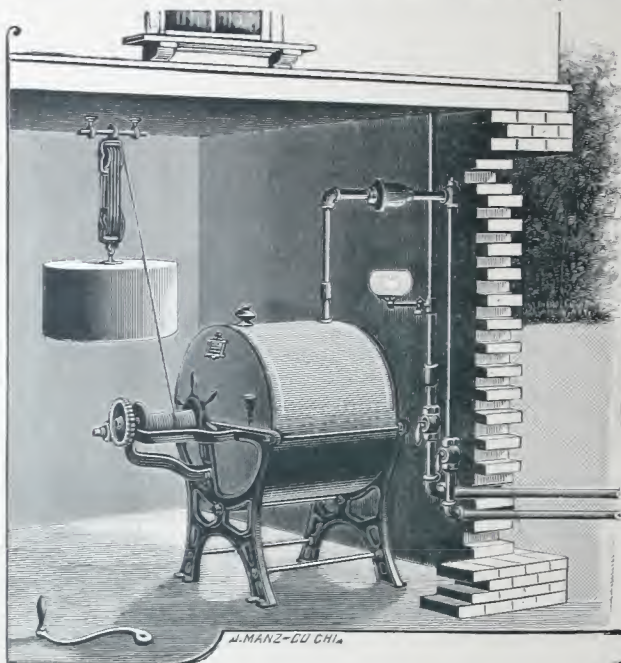
— 100 —



Residence of W. H. Jones, St. Johns, N.H.

the manufacture of illuminating and fuel gas, the supply is always fully adequate to the demand, so that no increase in cost is to be anticipated, but rather the reverse. The gasoline used in making illuminating gas is lighter and richer than that sold for vapor stoves.

The COMBINATION GAS MACHINE consists of a Blower, or air pump, and a Carbureter, or generating tank. The Carbureter is an air-tight tank of heavy galvanized iron, divided horizontally into shallow cells. These cells are partially filled with gasoline, over the surface of which air may pass and become "carbureted," or impregnated with the vapors of the gasoline. In order to increase the evaporating surface, partitions of absorbent material are so placed in each cell as to form a narrow, coil-shaped pas-

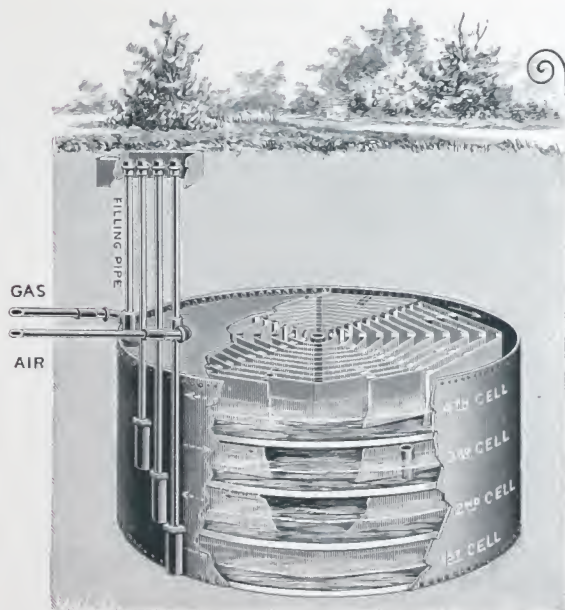


sage, on every side of which is gasoline. The air passes through each of the cells in turn, and following the convolutions of the coil, is made to traverse a greater distance in going through our carbureter than any other of the same size. No other Gas Machine presents even an approximate evaporating surface. The carbureter is placed outside the building and, with its connecting pipes, is buried in the ground at a depth that precludes possibility of accident and prevents the temperature of the gasoline or the gas being affected by the weather.

The motive power of the Blower is a weight which

must occasionally be wound up. The blower takes in air from the room in which it stands, or by an induction pipe from out of doors, and forces it through the air pipe to the carbureter. Here the air passes over the surface of the gasoline in the several cells and, enriched with its illuminating properties, returns through the gas pipe to the riser in the building, and is conducted to the various burners. When the lights are shut off the pump is at rest and no gas is made.

Turning on one or more lights starts the machine in motion. It will thus be seen that the apparatus is purely automatic, making only as much gas as is wanted and only as fast as it is used. The lights may be turned out, the machine left unused for a year, and it will then be found ready to light.



SIMPLICITY.

The management of our machine requires no skill and very little care. In an ordinary dwelling house it consists simply in the occasional winding up of the weight which propels the blower, and replenishing the carbureter with gasoline once in two to six months. A single oil lamp requires



more skill, care and attention than the lighting of a whole house with our apparatus. Of course, machines supplying a large number of lights require somewhat more attention.



Illustration of the Windmill, showing the building and the tower.

ECONOMY.

Taking into consideration the size and brilliancy of the lights, it may safely be said that no artificial light has ever been produced that will compare with this in cheapness. The cost of each light,

equal to an ordinary city gas burner, averages about half a cent per hour. Coal gas usually costs from \$2 to \$5 per thousand cubic feet, while the gas manufactured by our machine will not, in most cases, exceed \$1.00 per thousand. Five gallons of gasoline will produce about one thousand cubic feet of gas, so that in localities convenient to gasoline markets our machines will furnish gas at about 70 to 80 cents per thousand feet.



Residence of JOSEPH H. BERRY, Esq., Grease Point, Mich.

150 Lights.

Heated by No. 9 BOLTON HEATER.

As compared with oil lamps, the cost is about the same, for an equal number of lights; but if the estimate is based on the quantity of light furnished our gas is materially cheaper.

Some of our customers, having used both our machine and electric light, have found our gas considerably cheaper and quite as satisfactory.

SAFETY.

Almost every day we read of some serious accident due to the use of lamps, or a fire or death caused by electric light wires. The safety of the Combination Gas Machine is therefore, an important feature. The gasoline is all contained in the airtight carburetor, which is buried in the ground outside the building. The blower, which is placed in the



Illustration of the house in which the Combination Gas Machine is used.

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Illustration of the house in which the Combination Gas Machine is used.

house or cellar, contains only air and water. No gasoline need be stored, as it is drawn directly from the barrels, in which it is bought, into the carburetor.

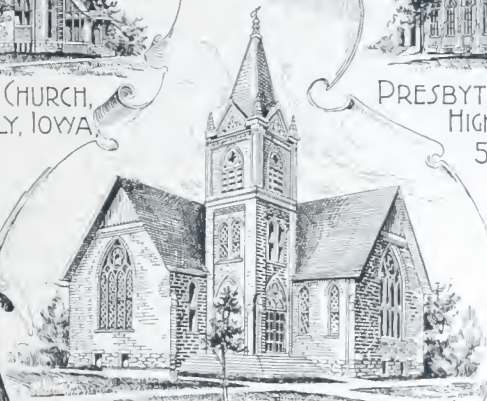
No fire or heat is used in the manufacture of our gas, and there is no more danger in using it than in using ordinary coal gas.



ST ANDREW'S CHURCH,
WAVERLY, IOWA.
75
LIGHTS



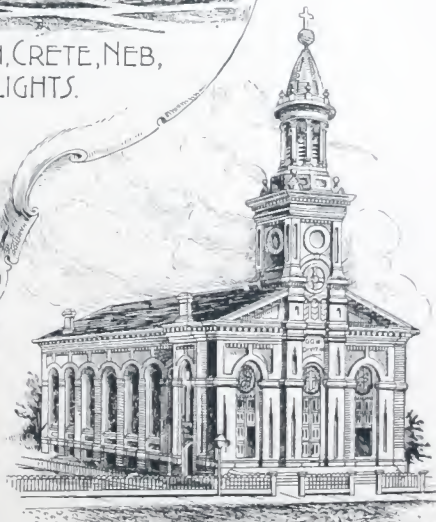
PRESBYTERIAN CHURCH,
HIGHLAND PARK, ILL.
50 LIGHTS.



M.E. CHURCH, CRETE, NEB.,
40 LIGHTS.



FIRST BAPTIST CHURCH,
150 GRANVILLE, OHIO.
LIGHTS.



ST THOMAS AQUINAS
100 CHURCH,
LIGHTS. ARCHBALD, PA.

GROUP OF CHURCHES ILLUMINATED BY THE COMBINATION GAS MACHINE.



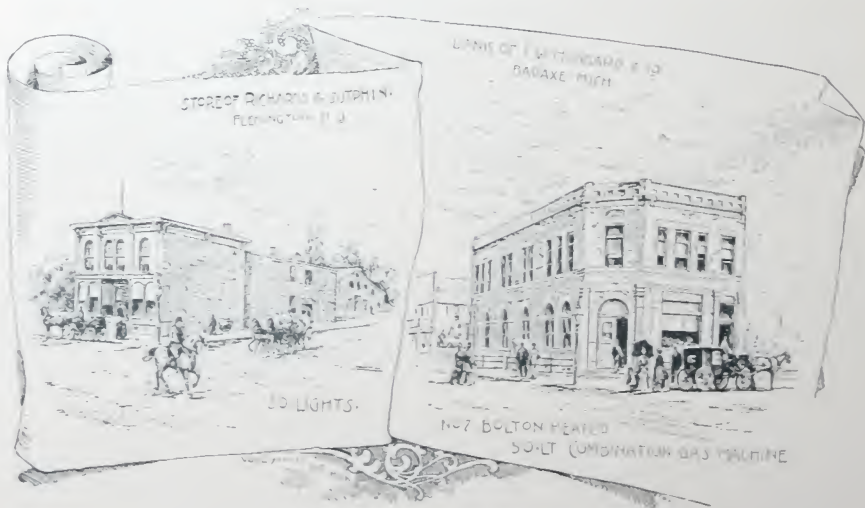
Residence of E. A. B. GARESCHÉ, Esq., St. Louis, Mo.
50 Lights.

Escaping gasoline gas gives off sufficient odor to be readily detected. It is far less injurious when inhaled than coal gas.

The absolute safety of our machine will be realized when we state that during over 20 years' use of thousands of machines, no accident has ever occurred.

DURABILITY.

The only machinery connected with the apparatus is that of the blower, which is of the simplest description. Its movement when working is hardly perceptible, and it is difficult to conceive of its wearing out in any reasonable



time. The remainder of the apparatus being always completely at rest can never wear out, and by its situation and arrangement is protected against rust or decay.

The carbureter is made of heavy galvanized iron, which being covered by a thick coating of an especially prepared asphaltum paint, made for us, is impervious to the corrosive action of the moisture and mineral salts contained in the earth.

The blower is made either of heavy galvanized iron or of the finest, hard-rolled copper. The latter material is sometimes preferred, and is rather more expensive. The interior of the iron pump, which is exposed to the water, is coated with asphaltum paint in the same manner as the exterior of the carbureter.



Residence of A. J. CARTWRIGHT, Jr., Honolulu.
30 Lights.

Recognizing the desirability, in many cases, of having the entire contract made with one party, we are prepared to sell a machine delivered and set in place, to pipe the building and to furnish and hang the fixtures, making a complete apparatus, all ready to light.

When used with proper burners, our gas is entirely free from *smoke* and *odor*, and is in no way injurious to health or property. It burns as well and as uniformly in winter as in summer. It gives a softer light than coal gas, equally as strong, and always steady. It is far softer and pleasanter than electric light.



We give *greater capacity* for supplying a given number of burners than any other manufacturer, so that ours is really the *cheapest* reliable apparatus on the market.

In order to produce a good, serviceable machine, at the lowest possible price, all superfluous ornamentation is dispensed with and labor and cost are expended where they will be most conducive to utility.

We pack our machines for shipping so that they may be transported to any part of the world without injury.

Gas of this kind cannot be satisfactorily used and measured through meters. This has always been an obstacle in the way of supplying different parties with gas from one machine. We overcome the difficulty by a patent carbureter, by means of which two or more parties can be supplied

LINCOLN HALL & CHAPEL.
BEREA COLLEGE. - BEREA, KY.



75 LIGHTS

NORMAL UNIVERSITY.
CARBONDALE, ILL.



300 LIGHTS

MICHIGAN MINING SCHOOL
HOUGHTON, MICH.



400 LIGHTS

500 LIGHTS

CONVENT OF THE SACRED HEART
ST. JAMES PARISH, LA.



150 LIGHTS

1000 LIGHTS



BUCHTEL COLLEGE.
AKRON, O.



ROYAL MILITARY COLLEGE - KINGSTON, ONT.

GROUP OF SCHOOLS ILLUMINATED BY THE COMBINATION GAS MACHINE



with gas without interference with each other, in quantity or cost of gas consumed, each party having to pay only for the gas he burns. Where there is no occasion for dividing the cost, several buildings may be lighted by our regular machine, the gas being conveyed from the carbureter to one or more buildings, or to out-of-door lights, as may be desired.



VIEW OF SACKING STOVE WORKS. 1000 LIGHTS



Residence of THOMAS BERRY, Esq., 341 Madison Avenue, Detroit.

75 Lights.

Heated by NO. 9 BILTON HEATER

The gas fixtures used are of the same style and patterns as those for coal gas, the only difference being in the burners. We are able to furnish gas fixtures of such patterns as may be selected, at as favorable prices as they can be procured at anywhere.

The space occupied by the machine is insignificant. For the pump a space six or seven feet square, in a cellar or some convenient room on any floor, is sufficient. The carbureter is under ground, only a box five or six inches square being visible, the top of which may be level with the surface of the ground.

INSURANCE.

This machine has been accepted and approved by the National Board of Underwriters, and in using it there is NO INCREASE IN INSURANCE RATES over buildings lighted by city gas.

HEATING STOVES AND GAS GRATES.

We make Gas Heating Stoves, useful where a small fire is only desired for a short time. Also Gas Grates which may be fitted into ordinary fire-places, and which give a most genial and cheerful warmth and glow.

GAS FOR COOKING.

One of the most important applications of gas, and one that is rapidly increasing in favor, is its use in cooking. It is cleanly, can be absolutely regulated, is free from smoke and odor, and is far more economical than coal, particularly in warm weather when fire is required for only a part of the time. This economy is increased when gasoline gas, made by our machine, is used. Tests of the comparative results of cooking with different fuels have shown that, in addition to gas costing less, food prepared by it loses less in weight than when cooked by a coal fire.

We make Cooking Stoves of the most approved and perfect designs, also Bath heaters, Gas Griddles, Sad-iron Heaters, etc. Many of our customers use no other fuel for domestic purposes. A house that is warmed by the BOLTON HOT WATER HEATER, and furnished with gas from the COMBINATION GAS MACHINE for lighting and cooking purposes, doubtless comprises the perfection of modern comfort and luxury.



VAN LEEUWEN CO.
DETROIT
MICH.

PIPING.

In building a new house, the additional cost of piping it for gas is comparatively slight, and materially less than if the



OPERA HOUSE, OLLY VALL
(See page 10)

work has to be done after the house is completed. It is, therefore, well for persons building new houses to have them piped in view of the possibility of future use of gas.

Piping for gasoline

gas differs in many respects from that for coal gas. We have printed instructions, which will enable any expert gas fitter to pipe a house properly for gasoline gas, which we shall take pleasure in furnishing free of charge and free of obligation of any sort. Buildings already completed can be piped without injury of any kind to the plastering, wood work or any part of the interior finish.

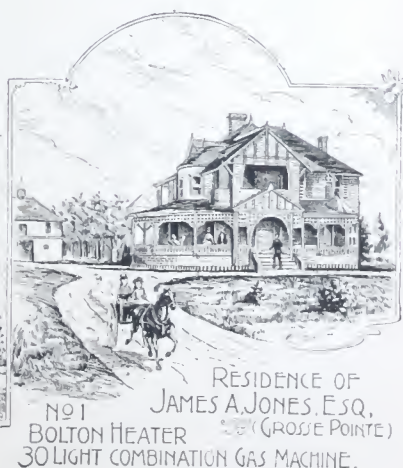
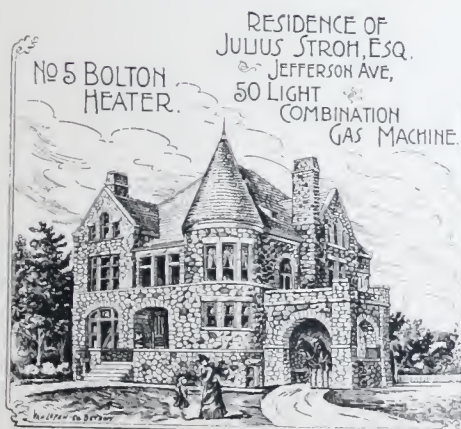
ESTIMATES.

In writing for estimates, state for what purpose the building is to be used, and send rough plans showing arrangement of rooms, also heights of ceilings, particularly in basement; location and number of lights; best location for carbureter and blower. State how many hours per day on

an average the lights will be burned, and how many, if any, will be burned all night.

Having such data we will promptly furnish estimates on a machine of suitable size, f. o. b. cars, Detroit, or delivered and set ready to attach to risers in the building; or all complete, with the building piped ready to attach fixtures.

Our salesmen can show catalogues giving a large variety of the latest and most attractive designs in fixtures; or, we will send such catalogues to distant purchasers.



The Bolton Hot Water Heater.

The Hot Water System of heating is now beyond all question the most in favor in all parts of the country. Its advantages are so well known that only the briefest summary is necessary.

- ITS SAFETY** is a prominent feature. No explosion or fire can possibly be caused by the hot water apparatus.
- ITS ECONOMY** strikes a tender spot in the heart of the man who carries the pocket-book and pays the coal and repair bills.
- THE COMFORT** of its constant and pleasant warmth makes it a luxury which those who have once experienced are unwilling to forego.
- ITS SIMPLICITY** and ease of management have abolished the labor and inconvenience attending the management of stoves, furnaces and steam boilers.
- ITS CLEANLINESS** appeals to the good housewife whose soul revolts at the dust and offensive odors from hot-air furnaces and stoves.
- SUPERIOR HEALTHFULNESS** is ascribed by leading authorities to the hot water system, and the reproach of badly heated American houses is disappearing.

The Bolton Has the Best Record

For the Longest Time

In the Coldest Climates.

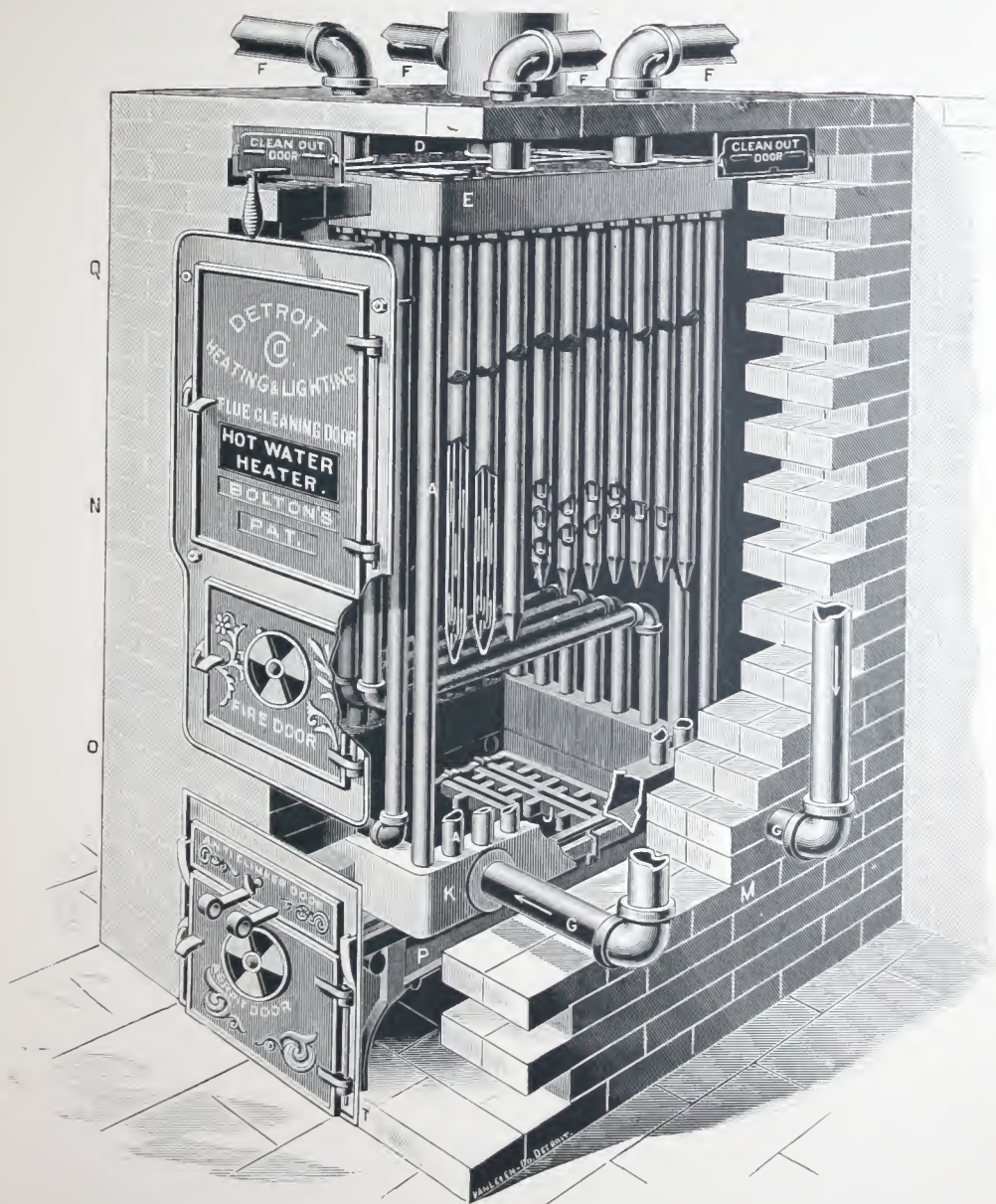
- ITS CIRCULATION** is practically all vertical.
- ITS FIRE SURFACE** is the largest in proportion to grate surface.
- ITS FIRE SURFACE** is all directly exposed to the fire.
- ITS BRICK CASING** prevents waste of heat, by radiation, in the cellar.
- IT IS PRACTICALLY ALL ONE PIECE**, all its parts being screwed together, with no bolted, packed or flanged joints to leak.
- ITS DURABILITY** is extraordinary, and while repairs are rarely required, they can be made, when necessary, with a singular facility.
- ITS DROP TUBES** are a special feature. No other known device approaches this in giving extensive heating surface, combined with vertical circulation.
- MODERN DWELLINGS OF THE BETTER CLASS** are almost uniformly heated by this system. It is an essential among modern improvements.
- IN GREENHOUSES**, where an unvarying temperature is necessary to the life and successful growth of the plants, it is invaluable.
- IN SCHOOLS, HOSPITALS** and other institutions where the health and comfort of the inmates are of the highest importance, its constant and healthful warmth is highly prized.

Send for illustrated book, "WARMTH FOR WINTER HOMES," giving description, illustrations, references, etc.

Correspondence earnestly solicited, and all inquiries fully answered.

ESTIMATES promptly and freely given to **ARCHITECTS** and others, on application.

Expert assistance and detailed **WORKING PLANS** furnished to **FITTERS** who are inexperienced in this branch of work.



THE BOLTON HOT WATER HEATER



REFECTORY IN DOUGLAS PARK, CHICAGO.

75 LIGHT



